Distr.
GENERAL

IDB.8/6/Add.1
PBC.7/8/Add.1
21 March 1991

ORIGINAL: ENGLISH

United Nations Industrial Development Organization

Industrial Development Board

Eighth session
Vienna, 1-5 July 1991

Programme and Budget Committee

Seventh session
Vienna, 22-26 April 1991
Item 17 of the provisional agenda

COMPUTERIZATION PROGRAMME OF UNIDO

Report of the working group of independent experts on the computerization of UNIDO*
(Vienna, 11-14 February 1991)

Addendum

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I. EXCHANGE OF CORRESPONDENCE BETWEEN THE EXPERT, MR. J. MARTINEZ MERONO AND MR. B. ADAMCZEWSKI, CHAIRMAN OF THE WORKING GROUP

Vienna, 15 February 1991

JMM/as

Dear Mr. Chairman,

May I send you this note to state my position regarding the document produced in the session which concluded yesterday.

As a result of this meeting, we drafted a document entitled "The Report of the Working Group of Independent Experts on the Computerization of UNIDO, Vienna, 11-14 February 1991".

From my point of view, this document reflects very precisely the technical aspects and considerations objective of the study. However, because of the pressure of time to draft it, I think there are some significant elements of the document which are not clear enough, especially those regarding the organization of work within the Group and the financial aspects of the computerization of UNIDO. In fact, I think that any reader of the document would not understand clearly which was the real position of the Group about these problems, and which I will later describe, as I see them.

In fact, none of the experts has signed it for the time being, and even a significant part of the Group has not even examined its last version, which was produced in the last minute, when some of the members of the Group had already left.

These alternatives are as follows:

First alternative

It basically consists of leaving everything as it is, maintaining the present computer systems, looking for the best way to finance the acquisitions already done.

We regard this alternative as completely inadequate. Firstly because this way, the organizational problems, which we believe are the real cause of the present situation, would not be solved. And secondly, because we are not confident of the 44 million dollar estimate of the programme, which we believe could be much higher.

At the present moment, it is impossible for us to estimate which would be the real cost of this alternative. If we wished to obtain it, we would need a detailed financial study. The position supported by the majority of members of the Group has been to consider this study as not necessary. The reason is that this alternative is obviously inadvisable, regardless the final figures which, with a better or worse accuracy, could be obtained.

* The present document has not been edited.

V.91 22761 9906e

Distr.: 26 March 1991

However, the representative of France has defended the convenience of a further study of this issue, in order to provide better information for the choice between both alternatives.

Second alternative

To launch several substantial modifications in procedures and technical options within UNIDO, including, if possible, a redesign of its computerization structure, in order to better adequate it to the real needs of this Organization.

The Group considers this option as the only feasible. However, it has the handicap that at this stage it is impossible to calculate the savings which could be obtained in relation with the figure of 44 million dollars mentioned above. The reason is that these savings would depend on issues such as the negotiations with the suppliers of the equipments, specific technological decisions on final configurations, etc.

Consequently, the Group considered the need of an immediate appointment of a team of independent consultants, which should accomplish a detailed analysis of the real computer needs of UNIDO by 15 May 1991, as well as preparing the guidelines for an EDP policy according with the recommendations of this Group of experts. This appointment would be justified by the load of work implied (approx. 4-6 man/month to be accomplished in six weeks). Obviously, this work can not be done by the present Group of experts. However, the Group could co-ordinate the work of the consultants.

As a consequence of all this, I think that this document must be considered as a provisional one, and, in my opinion, the mandate that the Industrial Development Board gave to the Member States has not been yet completely fulfilled.

Sincerely yours,

Julio Martinez Meroño
Representative for Spain

Mr. Bernard Adamczewski
Chairman, Experts Group Meeting on
UNIDO Computerization Programme
(Vienna, 11-14 February 1991)
Vienna

B. Adamczewski
41 Gloucester Place
London W1H 3PD

21 February 1991

Dear Dr. Martinez,

Thank you for your letter of the 15 February 1991 which you personally gave me in Vienna that day. I am passing it and my answer to you on to Mr. Kayalar, the Secretary of the Industrial Development Board, as an addendum to our report. Had I only had it two hours earlier I could have dealt with it immediately, but I don't think the slight delay matters as all these things have to be properly and calmly considered in any case.

I entirely agree with what you set out in terms of the two alternatives and I believe you are correctly expanding on a smaller section in the report of the working group. I don't think that the working group's report states that the consultants to be employed should do 4-6 man/months work in 6 weeks, but merely that they should have an interim report prepared within 6 weeks of their appointment. This appointment itself must be made by the 1 April 1991, if UNIDO timetables are to be adhered to.

I even agree with you that the report our group prepared is "provisional" and may at any time be added to by any number of thoughts or deliberations to which the governments concerned wish, or can arrange for, relevant experts to devote time. I personally would be happy to sign it if required.

I personally do not believe that the question of the status of the report is the main issue. I and I believe, you and most of the other technical people who attended our meeting are convinced that UNIDO needs to take some urgent action for technical, administrative and contractual/legal reasons, all of which are compelling. So the main question is not how provisional our report and findings are but whether there is enough time to obtain findings that are nearer final or whether these "provisional" findings are going to be the best that can be obtained before many of the urgent deadlines are passed. As decisions have to be made in the next 2 or 3 weeks it is up to the respective governments to sort out between themselves whether they want better information before acting and so risk incurring technical failure, administrative difficulties and contractual/legal penalties as a result of any delay; or whether they will act - as any commercial organization would - immediately on the basis of the best available information even if the best we experts could currently say on the question of finances, is that the UNIDO computer system should cost much less that presently budgeted.

I am confident that as a group we did a good job, that our report points UNIDO in the right direction, and if it is followed up it will help to avert major financial and administrative problems.

I particularly enjoyed meeting you and getting some understanding of your work. I also appreciated the efforts you made to try and reconcile Mme Trupin to the position of the rest of us. I do hope the various governments keep our group alive and that we will be able to meet again, perhaps at an improved UNIDO.

Yours sincerely,

B. Adamczewski

Dr. Julio Martinez Meroño
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Spain

II. REPORT BY THE EXPERT, MR. J. I. LEVINSON

March 5, 1991

TELEFAX TRANSMISSION SHEET

TO: B. Adamczewski

FROM: Jerome I. Levinson

COMMENTS: My clients have authorized me to release to you the additional opinion I provided to them with respect to the validity of the IBM contracts. You are free to use it as you see fit as Chairman of the Group. I would appreciate your keeping me informed as this matter progresses.

Best regards.

Jerry Levinson

February 28, 1991

MEMORANDUM

TO: Ambassador Eugenio Anguiano, and
Ambassador Hernan Gutierrez

FROM: Jerome I. Levinson

RE: UNIDO Computerization Programme

BACKGROUND

1. The Industrial Development Board at its Seventh Session adopted decision IDB.7/Dec.26 on the computerization programme of UNIDO. In that decision, the Board decided to establish a working group of independent experts (the Group), to be funded by individual member States. The terms of reference of the Group were as follows:

"(i) To reassess UNIDO's needs regarding computerization from the technical point of view;

(ii) To examine the contractual aspects of the proceedings as well as the implications of the clauses within those contracts for UNIDO;

(iii) To study the financial options applicable to the EDP systems;

(iv) In light of this evaluation, to make appropriate recommendations on an EDP system."

2. The first meeting of the Group took place in Vienna at UNIDO's headquarters, February 11 through February 14, 1991. The Report of the Group was submitted through the Chairman of the Group, Mr. Bernard Adamczewski, to the Secretary of the Industrial Development Board, Mr. A. Kayalar, for transmittal to the Industrial Development Board.

3. The occasion for the appointment of the Group was the fact that the system contracted for by the UNIDO staff appeared to be far more expensive than the member Governments felt they had been led to believe it would cost and there were not sufficient budgeted funds to pay for the system. It is not clear as to whether this is the Final Report of the Group or whether there are to be further meetings.

4. The principal conclusions of the Group can be summarized as follows: (i) UNIDO had designed an Electronic Data Processing system (EDP) far in excess of its present and foreseeable needs; (ii) the mainframe was being used at a maximum of 30 per cent of its capacity and within the foreseeable future the excess capacity would not be absorbed by UNIDO or by third parties; (iii) the technical group could not agree on an alternative architecture, largely because no data base existed upon which to make a judgement; (iv) the UNIDO EDP staff did not have the technical capacity to design an alternative solution more in keeping with UNIDO's realistic needs, now and in the future; (v) the Group did not have confidence in the current estimates ($45 million) of the cost of the system that had been contracted. Consequently, additional work would need to be done to ascertain a realistic cost of the contracted system; (vi) the IBM mainframe and Facilities Management contracts contained provisions that permitted UNIDO to initiate a renegotiation of the hardware and software and management services that had been contracted with IBM.

5. The Group recommended that UNIDO (a) initiate renegotiation of the IBM mainframe contract to downsize the mainframe since under any conceivable set of assumptions, the mainframe contracted with IBM was far in excess of UNIDO's current and foreseeable needs (b) contract a further smaller group of experts to design an alternative solution for UNIDO's computerization requirements for the future. At the same time, the Group further agreed that the expert from France should seek to obtain a more accurate estimate of the cost of the system contracted by UNIDO. (Since the Group could not agree on an alternative technical solution, it was not possible to offer financial options applicable to the EDP system as requested by the terms of reference of IDB.7/Dec.26.)

6. The report of the Working Group of Independent Experts sets forth my view that (i) the IBM mainframe contract (UNIDO contract No. 89/467) specifically allows UNIDO to request a downsizing of the mainframe (and a change in the ancillary software and maintenance) without any penalty to UNIDO; and (ii) the Facilities Management Contract (UNIDO contract No. 90/335) permits a renegotiation and/or cancellation of the Facilities Management contract.

7. You have asked me to address the further question whether UNIDO staff exceeded their authority in entering into the IBM contracts and, if so, whether the contracts can be considered invalid. In my opinion, the UNIDO staff did exceed its authority in entering into the contracts with IBM. Whether an arbitrator would hold that the contracts were for that reason invalid may depend upon the law which is to govern the transaction.

This last question is not at all clear. (Under the UNIDO contracts with IBM, disputes are to be settled by arbitration.)

DISCUSSION

8. UNIDO became an independent United Nations Agency in 1986. There are three governing levels of UNIDO: the General Conference, which is made up of all member States and is the ultimate decision making body of UNIDO; the Industrial Development Board; and a Programme and Budget Committee. The latter two bodies have a composition which is less than the full membership of UNIDO. Programme and budget proposals emanate from the Director-General of the organization; a proposal is first presented to the Programme and Budget Committee (PBC). The PBC then makes its recommendation to the Industrial Development Board (IDB). And the IDB makes a final recommendation to the General Conference.

9. UNIDO operates on a biennium basis, that is to say that programmes are approved and funds appropriated for two-year periods. A decision on the budget and programme are considered final only after the General Conference has given its approval to them. The budget has different categories; the Director-General can make changes within categories, but to convert funds from one category to another requires the approval of the General Conference.

10. UNIDO had shared mainframe time and storage capacity with the International Atomic Energy Agency (IAEA). Sometime in 1987, however, UNIDO and IAEA concluded that the arrangement was not satisfactory and was likely to be even less satisfactory in the future. The UNIDO staff began to plan for a new arrangement based upon UNIDO having its own computerization system rather than sharing capacity with IAEA. UNIDO contracted an independent consulting firm, GMO, to design an alternative framework for its computer operations. Due to limitations of funding, GMO's recommendations were based upon a limited data base. Nevertheless, GMO confirmed the UNIDO staff's basic analysis that the best solution for UNIDO involved UNIDO having, among other things, its own mainframe capability.

11. The UNIDO computerization programme was conceived as a "whole package consisting of a new data centre with a mainframe, peripherals, a network of desk top equipment and related cabling for connection to the mainframe, maintenance, increased training including a physical site, personnel and new systems application." (IDB.7/31/Add.1, para. 3.) The GMO report (August 1988) recommended an IBM 3090-120 E mainframe with a storage capacity of about 10,000 million bytes and one communications controller for 28 lines. (GMO report p. 46 and figure 11.)

12. In March 1989, the UNIDO staff briefed the Permanent Missions of the member Governments of UNIDO with respect to the computer programme then under consideration, including the purchase of a mainframe with a capacity equivalent to an IBM 3090-120 E. The estimated cost of the entire system, including the proposed 3090-120 E type mainframe, was approximately $27.85 million. (IDB.7/31, para. 4.)

13. The informal briefing of the Permanent Missions was not a formal procedure of UNIDO equivalent to a presentation to the PBC. Nevertheless, it was a procedure initiated by the Director-General as a means of informing the Member States of current issues and getting a sense of their reactions.

14. Apparently, the reaction of the Permanent Missions was favourable to the UNIDO staff programme. (IDB.7/31, para. 5.) On the basis of this favourable reaction, the UNIDO staff proceeded with the plan for its own computerization programme. However, sometime in June 1989, the operating assumption of the programme changed. Instead of a mainframe capacity equivalent to the IBM 3090-120 E, the UNIDO staff concluded that projected growth in demand for UNIDO computer services would require a mainframe (and ancillary services) of substantially greater capacity. This change in plan from that recommended by the GMO report implied costs substantially in excess of the $27.85 million which had been presented to the Permanent Missions in the briefing of March 1989.

15. The cost implications of the higher capacity mainframe were realized by the technical staff and were brought by them to the attention of higher management. (Interview of Mr. Guzman with the Group of Experts.) However, Guzman and his technical group were advised to go ahead and plan for the more advanced mainframe. It is not clear precisely who gave the go-ahead and in what form (verbal or written). From interviews with the UNIDO staff, it appears the then Deputy Director/Administration of UNIDO, the second in command of the UNIDO staff, was the one who authorized the technical staff to proceed along the revised lines. This individual subsequently left the UNIDO staff and was replaced by the current Deputy Director, Mr. Charles Warner. No one could tell the Group the extent to which the Director-General himself was involved in the decision to authorize the EDP system based upon the higher-powered mainframe recommended by the technical staff.

16. What is clear is that the Director-General (or his Deputy) did not convoke a further informal meeting of the Permanent Missions to advise them of the changed assumptions with respect to the mainframe and the consequent higher costs of the programme.

17. The bid specification documentation was thus prepared not upon the mainframe information that had been provided to the Permanent Missions in the briefing of March 1989, but upon the revised plans of the UNIDO staff of June 1989. Requests for proposals then issued in September 1989 to 13 firms of which only three responded: affiliated firms of IBM, Hitachi and Olivetti. The latter two firms were disqualified for technical reasons. The mainframe contract was awarded to IBM. (I leave aside for purposes of this discussion various alleged defects in the bidding process.) The mainframe contracted for was an IBM 3090 250 S, a system more than twice as large as the maximum expansion ever envisaged by the GMO consultants.

18. By October, the UNIDO staff knew that the estimated cost of the system proposed to be contracted from IBM, including the higher-powered mainframe, was far in excess of the $27.85 million cost estimate presented to the Permanent Missions in March 1989. The programme had originally been proposed to be financed from savings to be achieved from (a) terminating the sharing arrangement with the IAEA and (b) redeployment of staff resources, but this financing assumption was obsolete the moment the UNIDO staff determined upon a higher capacity mainframe in June 1989.

19. Indeed, by October 1989 when the bids had been received and evaluated, for the 1990-1991 biennium, there was a shortfall of projected resources for the computerization programme of $4.7 million. The External Auditor aptly summarized the situation: "Since, as our review disclosed, it was perfectly clear in October 1989 (when the bids for the mainframe package were received) that there would be a substantial shortfall of resources (US$4.7 million) in 1990-1991, these facts should, in our view, have been brought to the attention of the General Conference." (Information Note, Report of the External Auditor on in-depth examination of all aspects of the acquisition of the EDP system, February 4, 1991, para. 83 (c); hereafter references to the Report are referred to as External Auditor Report, February 4.)

20. The General Conference had been scheduled to meet in November 1989 to consider the programme and budget for the biennium 1990-1991. In interviews with the Group, the UNIDO staff claims that it did attempt to bring to the attention of the General Conference the increased cost implications of the revised mainframe programme. It proposed that it be allowed to redeploy funds from the 1988-1989 biennium between categories to meet the higher costs. Such a redeployment required the approval of the General Conference.

21. However, nowhere did the UNIDO staff spell out the changed assumptions, the fact that it was proposing to contract for a larger mainframe capacity (and a more costly and sophisticated system) than it had informed the Permanent Missions in March 1989 and that consequently outlays in future years would be substantially higher than those presented to the Permanent Missions. Again, the External Auditor Report, February 4, observes: "As for the 1988-1989 appropriation redeployment proposals, the 1990-1991 budget proposals did not provide information on the commitments and estimates of other possible costs of the overall programme for subsequent bienniums". (The External Auditor Report, February 4, para. 83 (c).)

22. Since UNIDO operates on the basis of appropriations of funds for a biennium period, it has to obtain specific authorization from the General Conference for funding for multi-year outlays beyond any one biennium period. The Financial Rules of UNIDO provide that the Deputy Director, Administration "may approve commitments against current and future fiscal periods when they are necessary in the interests of the Organization, provided that such commitments are either: (i) for activities that have been approved by the Conference and that are expected to continue beyond the end of the current fiscal period; or (ii) authorized by specific decisions of the Conference". (Director-General's Bulletin, The Financial Rules of UNIDO, UNIDO/DG/B.74/Rev.1, 15 June 1990, Rule 109.6. The General Conference, by decision GC.2/Dec.25 of 12 November 1987, approved the Financial Regulations of UNIDO, which have been amended from time to time. The amendments do not appear to impact upon Rule 109.6.)

23. The General Conference in its meeting of November 20-24, 1989 did not approve the 1988-1989 appropriation redeployment proposals of the Director-General for the EDP programme. The Conference was never advised of the changed assumptions with respect to the mainframe and the consequent increased future costs of the programme. What the Conference did approve was a general statement in the introductory chapter acknowledging the increased efficiencies to be achieved by an enhanced EDP system, and the necessity for UNIDO to have its own mainframe, relinquishing its central processing capacity in the IAEA computer. And it concluded, "Financial resources to implement this new programme are expected to be met through the redeployment of resources at present earmarked for the joint computer service provided by the IAEA and, if necessary, through economies in staff and non-staff expenditures". (Programme and budgets, 1990-1991. Based on decision GC.3/Dec.23 and Resolutions adopted by the General Conference at its Third Session, GC.3/10/Rev.1, 12 April 1990, para. 30.)

24. In other words, the General Conference approved an EDP programme based upon the financial premises that had been presented to the Permanent Missions in the informal briefing of March 1989: that the programme would be financed through savings achieved by discontinuing the sharing arrangement with IAEA and redeployment of staff. Having failed to obtain the approval of the General Conference for the redeployment of 1988-1989 appropriations to help defray the increased cost of the enhanced system offered for bid in September of 1989, nevertheless, the UNIDO Administration signed the mainframe contract with IBM on December 7, 1989, barely three weeks after the close of the meeting of the General Conference.

25. In so doing, in my opinion, the Administration of UNIDO clearly exceeded its authority. It committed UNIDO to a multi-year appropriation of funds for the IBM contract without the clear approval of the General Conference for the system it proposed to contract. It therefore violated UNIDO's own Financial Rules, which had been approved by the General Conference.

26. In failing to disclose to the General Conference the fact that it had changed the basic assumption upon which it had obtained informal concurrence of the Permanent Missions for the EDP plan, namely, the size of the mainframe and therefore the estimated cost of the programme, the UNIDO staff came very near to deceiving the member Governments of UNIDO. (It escapes a categorical statement to that effect by virtue of having sought a redeployment of funds from the 1988-1989 biennium, a redeployment that the staff asserts constituted notice to the General Conference of a change in the EDP programme. However, as previously noted by the Auditor General, such a request hardly met the requirements of full disclosure to which the members of the General Conference were entitled.)

27. Whatever the moral or ethical considerations, the fact is that the Conference did not approve the requested redeployment. The UNIDO staff, consequently, was on notice that it did not have the approval of the Conference for the requisite funding of the enhanced programme proposed to be implemented by the staff.

28. In light of this record, the External Auditor characterizes the IBM contract commitment as "questionable". (External Auditor Report, February 4, para. 84.) In my opinion, this characterization is too generous. The UNIDO contract commitment to IBM exceeded the authority of the UNIDO staff. The relevant question then becomes, are the IBM contracts invalid by virtue of the fact that the UNIDO staff exceeded its authority in entering into such contracts? The answer to this question may depend upon what law is to be applied to the transaction.

29. The UNIDO contracts with IBM specifically provide that the General Conditions of UNIDO are incorporated as part of the contract. The General Conditions provide for dispute resolution through arbitration, using the United Nations arbitration mechanism. IBM has consequently foregone resort to the courts as a means of resolving any dispute that may arise. But the question still remains what law the arbitrator would apply to the dispute.

30. On its face, the choice of law would appear to be Austria: both parties to the contract are resident in Vienna; the contract was signed in Vienna. The delivery of the hardware and software and the performance of the services by IBM which are the subject-matter of the contracts are all to be performed in Vienna.

31. UNIDO, however, has not agreed to accept the application of Austrian law. The IBM contracts specifically provide that UNIDO has not waived its immunities under its Headquarters Agreement with the Government of Austria. Those immunities appear to be absolute. There is no equivalent in Austria of the Foreign Sovereign Immunities Act which prevails in the United States and which applies to international organizations resident in the United States. That legislation makes a distinction between commercial transaction entered into by such organizations and those which are inherent to their international functions. Commercial transactions subject the organization to the application of US law. No such limitation exists in Austria with respect to UNIDO or other international organizations resident in Austria. Hence, UNIDO may well object to invoking Austrian law to govern the transaction.

32. Moreover, arbitrators generally do not favour resolving disputes by means of legal interpretation. An arbitrator in a case like the one presented here may well resort to general principles of equity.

33. The substantive question is whether IBM could reasonably rely upon the apparent authority of the Deputy Administrator of UNIDO to sign the contract or whether IBM had a duty to ascertain that the Deputy Administrator did in fact have the authority to sign the contract. IBM would undoubtedly argue that UNIDO had allowed the Deputy Administrator in the past to sign vendor contracts. It therefore had conferred upon him the apparent authority to sign such contracts; vendors such as IBM could reasonably rely upon this past practice in assuming that the Deputy Administrator had the requisite authority without further investigation on the part of IBM. To do otherwise would be to unduly burden commercial transactions involving such international organizations as UNIDO and the vendors that deal with them. The lack of authority of the Deputy Administrator, IBM would argue, is an internal problem of UNIDO which should be dealt with as a UNIDO personnel problem.

34. There is a certain plausibility to the argument and in the United States there is some case law involving the doctrine of apparent authority which might give substance to the argument. Even in the United States, however, the case law with respect to apparent authority is murky. And in the context of the IBM transaction, the argument is unconvincing.

35. IBM is not a "mom and pop grocery store". It has a long-standing relationship with UNIDO. It was or should have been familiar with the financial constraints which had plagued the Organization. It must have known the UNIDO internal procedures which governed major expenditures and the requirement of approval by the General Conference for multi-year financial commitments. And if it did not know them, it should have known them.

36. It is not uncommon for other international organizations when entering into major financial transactions to be asked to provide a legal opinion as to the authority to enter into such transactions. For example, when the Inter-American Development Bank or the World Bank offer their bonds for sale in the financial markets, they must provide an opinion of counsel affirming that all internal approvals, according to a specific resolution authorizing the transaction, have been obtained for the proposed transaction, that the organization has the authority to consummate the transaction and the person signing on behalf of the organization is duly authorized to sign. To require the same level of care from IBM in ascertaining that a multi-million dollar transaction involving multi-year commitments by UNIDO had been duly authorized by UNIDO does not impose an intolerable burden upon a vendor such as IBM.

37. In sum, UNIDO has good legal grounds for seeking a renegotiation of its contracts with IBM. As noted in the Report of the Group of Experts, UNIDO can invoke the specific terms of the contract to request a change in the Deliverables and Services; IBM, by the terms of the contract, must respond. UNIDO can also invoke the "circumstances beyond its control" clause of the mainframe contract (section 12), should the member countries not agree to fund the contract. In the last analysis, UNIDO can declare the contracts invalid because there was no authority to contract the goods and services from IBM that were agreed.

38. In both the last two cases, UNIDO would be entering into uncharted legal waters. There are no clear precedents as to what constitutes "circumstances beyond its control"; and the question as to whether the UNIDO staff exceeded its authority and, if they did, as I believe they did, the legal consequences that follow from that fact cannot be predicted with a high degree of certainty. Whatever the uncertainties, however, UNIDO's legal bargaining position is at least as strong as that of IBM.

39. The more serious problem, in my view, is that the UNIDO staff does not agree with the opinion of the technical experts that the EDP architecture is the wrong design for the EDP for UNIDO; they want the system they have bought and they believe that it is the one that is technically correct for UNIDO for the medium and long term. Their heart is simply not in a renegotiation of the terms of the system that has been purchased from IBM. That is the dilemma that the member Governments of UNIDO face in this matter much more than any legal question.

III. REPORT BY THE EXPERT, MS. C. TRUPIN

(8 March 1991)

I. Résumé of the facts

I-1. Hasty and poorly planned computerization

In March 1989 the UNIDO Secretariat presented a computerization programme for the Organization informally to Member States. The estimated benefits were, in essence, of three kinds:

- A significant increase in productivity notably in the light of the constraints imposed by "zero growth";

- Increased autonomy for UNIDO, whose growing needs were said not to have been adequately catered for by IAEA;

- Finally, but as a secondary consideration, catching up with other organizations in the United Nations system.

At the time, the cost, based on a report carried out by the company GMO, was estimated at $US 27.8 million. It very soon became apparent that this figure had been significantly underestimated both because of the, to say the least, summary nature of GMO's work - resulting in a very imprecise evaluation of needs - and on account of an upgrading of the technical specifications of the system envisaged, particularly the central mainframe computer. In March 1990, the Secretariat gave the figure $US 44,360,000 for the cost of computerization. This estimate has since been continually repeated, in particular in the "Report on the development of the electronic data-processing programme of UNIDO" (IDB.7/31) submitted last October by the Director-General to the Programme and Budget Committee in response to conclusion 1990/2. Some data for assessing the reliability of this estimate are presented below.

I-2. Numerous deficiencies during implementation

The report drawn up by the external auditors at the request of the Board has brought to light a great many deficiencies, whether it be the absence of a feasibility study worthy of the name, any serious evaluation of needs or an overall plan; astonishing procedures for approving certain contracts, a series of hasty decisions and the continual calling in question of the programme modalities.

Given the scope and seriousness of the investigations carried out by the external auditors, the present report will not cover these various points again, but will confine itself to providing some data, on the one hand, on the current financial status of the computerization programme and, on the other, on the relevance of the solutions envisaged by the Secretariat. Owing to the brevity of the mission, major defects in the internal control systems of UNIDO and the high turnover of responsible officials, especially financial officials, in charge of the matter, some aspects remain fragmented or need to be completed.

Without overlooking these limitations which only an in-depth study on the financial and technical level could overcome, it seemed useful to inform the Board right now of a number of conclusions, even if they need to be refined, on account of the gravity of the situation which UNIDO has to face and the urgency of the solutions required.

II. The current financial situation

II-1. Evaluation of the current situation

The analysis of the financial situation relating to the computerization programme of UNIDO was submitted to the Programme and Budget Committee in October 1990. An overall summary can be made as follows, distinguishing contracts signed, purchases made and items to be acquired subsequently to enable the system to operate in a satisfactory manner.

Millions of $US	1989	1990-1991	1992-1993	1994-1995	Total
Contracts	3.69	6.42	8.26	5.38	23.75
Purchases	6.02	1.20	-	-	7.22
Future requirements	-	2.99	4.97	5.43	13.39
Total	9.71	10.61	13.23	10.81	44.36

This table reveals an increase of more than 60 per cent compared with the initial figures.

The estimates by object of expenditure are also shown broken down in annex I.

The essential elements are synthesized below.

	Total (millions of $US)	As percentage of total
Mainframe computer		
* Hardware		
- Total including future requirements	7.76	17.5%
(as percentage of total object of expenditure)	14.3%	
* Software		
- Total including future requirements	5.25	11.8%
as percentage	2.1%	
* Operation		
- Total including future requirements	6.18	13.9%
	0%	
* Maintenance		
- Total including future requirements	2.25	5.1%
	62.2%	
Office automation		
* Hardware		
- Total including future requirements	5.08	11.4%
	31.9%	
* Software		
- Total including future requirements	1.82	4.1%
	41.3%	
* Maintenance		
- Total including future requirements	3.26	7.3%
	18.2%	

	Total (millions of $US)	As percentage of total
Installation and supplies		
- Total	1.51	3.4%
including future requirements	0%	
Network		
- Total	3.23	7.3%
including future requirements	40.2%	
IAEA/ICC		
- Total	1.75	3.9%
including future requirements	100%	
Staff		
- Total	4.15	9.4%
including future requirements	100%	
Training		
- Total	2.12	4.8%
including future requirements	100%	
GRAND TOTAL	44.36	100%
including future requirements	30.2%	

These figures call for the following remarks:

- The elements relating to contracts were calculated from the clauses of various legal documents actually signed by UNIDO as of the date when the document was prepared (October 1990). However, no account was taken of the effect of inflation in cases where the contract had an indexation clause; equally, with the exception of the contract for the central system (No. 89-467), the possible termination payments at the end of the lease were not taken into account. There are also one or two instances of double counting, the same item being included both in purchases and in contracts.

  These errors of detail, regrettable and revealing of the rough-and-ready nature of the methods employed as they are, do not significantly change the figure of $US 23,750,000 for the period 1989-1995. Of this amount, $US 17,590,000 were outstanding 1/ at 31 December 1990. These financial data naturally exclude the effects, impossible to quantify at the present time, of possible renegotiation of some of the contracts concluded.

- The figures relating to purchases ($US 7,220,000 in 1989 and 1990), although this is not very clearly indicated in paragraph 16 of document IDB.7/31, represent sums for one-time obligations already settled at the date of the document. The amount is therefore certain and the corresponding sums have already passed through the accounts of UNIDO.

- While the degree of reliability of the two items above is broadly acceptable, the same is in no way true of the figure of $US 13,390,000 relating to "future requirements". It transpires from investigations undertaken that this amount was hastily determined, in February 1990, in less than a week and without any reliable system for gathering and verifying data being set up. In particular, the estimate was prepared by the EDP Service on its own and not checked by any other service. The corresponding documents, considered as working documents, are not accessible. These data, approximate to say the least, have not been updated since then and therefore do not take account of price changes or technological developments or of any modifications arising from the system actually installed. Moreover, although these estimates relate to the current biennium and the two following, inflation has not been included. Depending on the assumptions used, this omission alone could lead to an underestimate of the costs involved of between 25 and 40 per cent ($US 3 million to 5.5 million). These various points lead one to place absolutely no reliance on the item "future requirements".

The objects of expenditure most sensitive to this imprecision are:

- Costs of training, staff and computer cooperation with other organizations in the VIC, for which "future requirements" represent the total corresponding amounts ($US 8 million in total);

- Hardware and software costs for office automation, in which "future requirements" represent from 32 to 42 per cent of items or a total of $US 2.4 million;

- Network costs (40 per cent future needs or $US 1.3 million);

- Finally costs arising from mainframe maintenance (62 per cent "future requirements" or $US 1.4 million).

There is thus, in conclusion, a high degree of uncertainty, probably involving increases, given the lack of formalized procedures for developing projects which gives rise to constant upward pressure, concerning more than a third of the financial estimate presented by the Secretariat, which deprives it of any pertinence or credibility.

II.2. Analysis of the main increases

The table provided in annex II compares line by line the initial and revised estimates as they emerge from the various documents drawn up by the Secretariat. The total is as follows:

1/ Figure extracted from the report of the external auditors (paragraph 30).

	1989	1990-1991	1992-1993	1994-1995	Total
GRAND TOTAL					
Initial estimate	7.60	3.68	9.05	7.52	27.85
Revised estimate	9.71	10.61	13.23	10.81	44.36

Account being taken of the substantive reservations mentioned above and those connected with the reliability of the figures corresponding to future requirements, the items concerned may be summarized as follows:

		Percentage increase
Mainframe		
* Hardware:	initial estimate/ revised estimate	32.9%
* Software:	initial estimate/ revised estimate	73.5%
* Operation:	initial estimate/ revised estimate	121.5%
* Maintenance:	initial estimate/ revised estimate	78.8%
Office automation		
* Hardware:	initial estimate/ revised estimate	-19.6%
* Software:	initial estimate/ revised estimate	175.7%
* Maintenance:	initial estimate/ revised estimate	302.5%
Installation/supplies		
Initial estimate/revised estimate		221.3%
Network		
Initial estimate/revised estimate		n.a.
IAEA/ICC		
Initial estimate/revised estimate		-24.2%
Staff		
Initial estimate/revised estimate		4.5%
Training		
Initial estimate/revised estimate		430%
GRAND TOTAL		
Initial estimate/revised estimate		59.3%

These figures show very considerable increases for virtually all of the items considered:

- Expenditure for the mainframe thus rose from $US 12.9 million to $US 21.4 million, an increase of 66 per cent;
- Office automation expenditure rose from $US 7.8 million to $US 10.2 million (plus 30 per cent);
- Installation expenditure rose from $US 0.5 million to $US 1.5 million, that is to say a threefold increase, and the cost estimate for training rose by a factor of 5 ($US 2.1 million);
- Finally, for information, mention should be made of the cabling, which was initially forgotten although the system architecture was centralized, and was subsequently estimated at more than $3 million.

III. Solutions envisaged

The limits of the various solutions envisaged by the Secretariat are outlined below:

III-1. Rescheduling of expenditures: leasing-cum-instalment contract option: a way out making it possible to lighten the cash-flow burden, but more expensive in the long run

UNIDO considered with IBM a possibility for rescheduling the contract for the mainframe which was submitted to the programme committee in October 1990. To put it briefly, without going into technical details, this option amounts to backing up the current leasing-cum-buyout contract with a credit facility.

The comparative payment timetables for the two solutions are as follows:

Payments	Existing contract	Option envisaged
1989-1991	32.7	32.7
1992-1993	35.7	22.8
1994-1995	11.9	21.4
1996	-	10.8
Total	80.3	87.7

The payments would continue until 1996 instead of being completed (including the end-of-contract premium) in 1994, as in the case of the present contract. The consequence for UNIDO of this rescheduling, which would admittedly have the advantage of easing the cash-flow situation, would ultimately be an additional cost of 7.4 million Austrian schillings, i.e. about $US 0.6 million. It seems therefore that this solution should be ruled out, particularly since there is nothing to oblige the Organization to go through IBM to reschedule its debt.

III-2. Reduction of costs: imprecise and unconvincing savings

The following table outlines the financing of the reduced programme, as submitted by the Secretariat.

	1989	1990-1991	1992-1993	1994-1995	Total
Estimated expenditures	9.7	10.25	10.46	9.22	39.63
Financing:					
- Regular budget		4.06	4.20	6.32	
- Unused balance carried over		4.02	-	-	
- New Members' contributions		0.27	-	-	
- Operational budget		1.90	4.14	3.54	
- Savings generated		-	2.12	(0.64)	

The main savings envisaged are outlined below.

	Normal programme	Reduced programme
Mainframe		
* Hardware - Total	7.76	7.50
* Software - Total	5.25	5.25
* Operation - Total	6.18	5.38
* Maintenance - Total	2.25	2.24
Office automation		
* Hardware - Total	5.08	4.57
* Software - Total	1.82	1.46
* Maintenance - Total	3.26	2.96
Installation/supplies		
- Total	1.51	1.51
Network		
- Total	3.23	2.51
IAEA/ICC		
- Total	1.75	1.75
Staff		
- Total	4.15	3.25
Training		
- Total	2.12	1.26
GRAND TOTAL	44.36	39.64

These savings were calculated on the basis of an a priori objective of cutting expenditure and not, as would have been logical, on the basis of the establishment of a precise hierarchy of the respective priorities of the different applications. The methodology used in their calculation also prompts the same reservations as with regard to the estimates of future requirements mentioned above. They are therefore to be considered with the greatest caution, particularly since they relate in part to items that are specially difficult to estimate, such as training, in which excessive reductions might in the end prove counter-productive.

III-3. Increased income: a very uncertain path

The following table summarizes the financing of the programme revised to include income as established by UNIDO.

	1989	1990-1991	1992-1993	1994-1995	Total
Possible income	-	0.34	2.00	2.00	
Estimated expenditures	9.7	10.25	10.46	9.22	44.36
Financing requirements	9.7	9.91	8.46	7.22	35.29
Financing:					
- Regular budget		4.06	4.20	5.12	
- Unused balance carried over		3.68	-	-	
- New Members' contributions		0.27	-	-	
- Operational budget		1.90	3.34	3.24	
- Savings generated		-	0.92	(1.14)	

These income forecasts, in excess of $US 4 million for the next two bienniums, seem highly imaginative. What emerges, without ambiguity, from the recent exchanges of correspondence between UNIDO and IAEA is that the guiding principles governing the computerization of IAEA are based on totally different hardware, software and technologies. Furthermore, most circumspectly, the Agency wishes to avoid being in any way tied to a supplier holding a virtual

monopoly, which would have been the case had it shared UNIDO's installations.

In this connection, the question has recently been settled - in favour of independent computerization - by the decision-making organs of the Agency, finally killing off the $US 35,290,000 scenario envisaged by UNIDO.

III-4. Substantive uncertainties regarding the envisaged financing modalities

The funding of the initial programme is outlined below.

	1989	1990-1991	1992-1993	1994-1995	Total
Estimated expenditures	9.7	10.61	13.23	10.81	44.36
Financing:					
- Regular budget		4.06	4.20	6.32	
- Unused balance carried over		4.38	-	-	
- New Members' contributions		0.27	-	-	
- Operational budget		1.90	2.14	4.14	
- Savings generated		-	6.89	0.35	

The various items relating to income prompt the following comments:

- Charging of a fraction of the expenditures to the operational budget

Even though several of the applications envisaged are undeniably connected with projects piloted by UNIDO, the current modalities applied in charging a fraction of the expenditures ($US 1.9 million, $US 2,140,000 and $US 4,140,000 respectively) to the operational budget are not satisfactory.

The Organization's financial services are making the operational budget bear the non-financed balance on other items of data-processing expenditure, without justification of the fraction involved. The financial regulations of UNIDO, particularly regulation 3.3, 2/ clearly indicate a principle of "specificity" of the operational budget, which implicitly presupposes that only expenditures connected with technical assistance may be included therein. In these circumstances, far more precise justification should be provided for the amount charged.

- Use of the unused balance from previous years ($US 4,380,000 in 1990-1991)

This item raises a problem of substance because of the uncertainty regarding the real availability of the funds.

Thus regulation 4.2 (b) requires that regular budget appropriations not spent 12 months after the end of the fiscal period must be returned to the Member States. A decision by the Board is necessary, in any event, to provide for a waiver of this provision and to authorize the allocation of these unused funds to data-processing expenditures.

The budget for the biennium 1986-1987 was established in the traditional manner, on the basis of anticipated contributions from Member States. A number of Member States did not in fact pay, meaning that their contributions should be considered fictitious income. Although the corresponding funds are legally the property of UNIDO, they cannot be regarded as cash in hand in any way. Their possible use to finance data processing therefore requires, first and foremost, that they in fact be received, and it can certainly not be assumed that this will happen. The most serious reservations must therefore be expressed as far as their actual availability is concerned.

- Savings generated for the regular budget

The financing plan submitted indicates combined savings of $US 7,240,000 (6,890,000 plus 350,000) from 1992 to 1995. Some remarks are called for as far as the pertinence of these figures is concerned. At the technical level, the studies carried out concerning savings generated by computerization were very superficial or indeed non-existent, some figures having been simply taken from the GMO study. They should therefore be treated with extreme caution.

Moreover, it is essential to note that, if one approaches the matter from the viewpoint of the Organization's cash situation, rather than from the viewpoint of its budget, the sums mentioned must be additional savings in relation to the actual present situation and not in relation to the theoretical situation corresponding to the payment of all contributions. Thus, if by reason of its financial situation UNIDO has a vacancy rate higher than the obligatory 5 per cent, these vacancies, although they appear as "savings" on the basis of a comparison with the budget lines corresponding to authorized posts, have no counterpart in terms of available cash owing to the non-payment of certain contributions. The financing of the data-processing programme - which involves cash outlays - by savings presupposes, therefore, all other things being equal, that a net gain of $US 7,240,000 will be achieved in staff costs by 1995, and therefore that about 30-50 posts will actually be frozen.

- Contributions from new Member States ($US 270,000) also represent a very uncertain item which it would be hazardous to take for granted.

III-5. Available funds

UNIDO is in a particularly difficult financial situation at the present time. The only funds available are represented by the operational budget reserve, of which the part over and above the mandatory reserve, and therefore the usable part, is about $US 7 million. Regarding the regular budget, cash-flow forecasts for 1991 show strongly and increasingly negative monthly balances from April onwards, with deficits ranging from $US 400,000 to $US 18.3 million. In total, the closing balance for the financial year 1991 will be a debit balance of around $US 10 million. No sign of an appreciable improvement in this situation is discernible in the medium term. In this context, resources that can be assigned to the computerization programme are almost non-existent.

2/ Regulation 3.3 (b): An operational budget to be financed from voluntary contributions to the Organization and from such other income as is provided for in the present Regulations, including reimbursement of support costs of technical assistance activities, which shall provide for expenditures for technical assistance and other related activities.

It seems essential to decide on a maximum threshold of financially acceptable expenditures for UNIDO taking into account this de facto situation. This threshold, which it will admittedly be a delicate matter to decide on, can be calculated either in absolute terms or as a percentage of the regular operational budgets.

In comparative terms, and without an exhaustive study having been possible, it would seem that the data-processing expenditures of UNIDO, in relation to its budget, are more than twice those of FAO and ILO. Thus for the 1990-1991 biennium, data-processing expenditures represented about 5.7 per cent of the regular budget, and came to about 4 per cent as a percentage of the total of the operational and regular budgets.

It should also be pointed out that the computerization programme adopted for the International Atomic Energy Agency is $US 5 million, for an organization which is comparable in size to UNIDO but whose financial situation is incomparably better.

These various considerations lead to the conclusion that it is both possible, in the light of what has been done by other organizations, and indispensable in view of the cash situation of UNIDO to establish an imperative figure for future computerization costs of around $US 10 million. It may be added that it would be reasonable for the ceiling of expenditures per biennium not to exceed 2 per cent of the combined total of the regular and operational budgets, on the understanding that the Secretariat must justify in detail the sums charged to the latter.

ANNEX I. Breakdown of estimates by item

	1989	1990-1991	1992-1993	1994-1995	Total
Mainframe					
* Hardware					
- Contracts	2.05	0.79	2.77	0.69	6.30
- Purchases	0.35	-	-	-	0.35
- Future requirements	-	0.14	0.48	0.49	1.11
Total	2.40	0.93	3.25	1.18	7.76
* Software					
- Contracts	0.38	1.39	1.67	1.66	5.10
- Purchases	0.02	0.02	-	-	0.04
- Future requirements	-	0.02	0.04	0.05	0.11
Total	0.40	1.43	1.71	1.71	5.25
* Operation					
- Contracts	-	2.18	2.00	2.00	6.18
- Purchases	-	-	-	-	-
- Future requirements	-	-	-	-	-
Total	-	2.18	2.00	2.00	6.18
* Maintenance					
- Contracts	-	0.26	0.29	0.29	0.85
- Purchases	-	-	-	-	-
- Future requirements	-	0.10	0.62	0.68	1.40
Total	-	0.38	0.91	0.97	2.25
Office automation					
* Hardware					
- Contracts	0.28	0.68	0.48	-	1.42
- Purchases	1.99	0.05	-	-	2.04
- Future requirements	-	0.50	0.48	0.66	1.62
Total	2.25	1.23	0.94	0.66	5.08
* Software					
- Contracts	0.04	0.05	-	-	0.09
- Purchases	0.78	0.18	-	-	0.96
- Future requirements	-	0.01	0.38	0.38	0.77
Total	0.82	0.24	0.38	0.38	1.82
* Maintenance					
- Contracts	0.10	0.96	0.94	0.63	2.62
- Purchases	0.04	-	-	-	0.04
- Future requirements	-	-	0.27	0.33	0.60
Total	0.14	0.96	1.21	0.96	3.26
Installation-supplies					
- Contracts	-	-	-	-	-
- Purchases	1.19	0.32	-	-	1.51
- Future requirements	-	-	-	-	-
Total	1.19	0.32	-	-	1.51
Network					
- Contracts	0.86	0.11	0.11	0.11	1.18
- Purchases	0.68	0.08	-	-	0.74
- Future requirements	-	0.58	0.44	0.28	1.30
Total	1.52	0.77	0.55	0.39	3.23
IAEA/ICC	0.99	0.60	0.07	0.09	1.75
Staff	-	0.85	1.65	1.65	4.15
Training	-	0.78	0.56	0.81	2.12
GRAND TOTAL	9.71	10.61	13.23	10.81	44.36

ANNEX II. Detailed analysis of increases over initial estimates

	1989	1990-1991	1992-1993	1994-1995	Total
Mainframe					
* Hardware					
Initial estimate	1.74	0.55	2.10	1.45	5.84
Revised estimate	2.40	0.93	3.25	1.18	7.76
* Software					
Initial estimate	0.84	0.26	1.13	0.79	3.02
Revised estimate	0.40	1.43	1.71	1.71	5.25
* Operation					
Initial estimate	0.24	0.70	0.92	0.93	2.79
Revised estimate	-	2.18	2.00	2.00	6.18
* Maintenance					
Initial estimate	0.06	0.23	0.46	0.51	1.26
Revised estimate	-	0.36	0.91	0.97	2.25
Office automation					
* Hardware					
Initial estimate	2.09	0.65	2.11	1.47	6.32
Revised estimate	2.25	1.22	0.94	0.67	5.08
* Software					
Initial estimate	0.22	0.07	0.22	0.15	0.66
Revised estimate	0.82	0.24	0.38	0.38	1.82
* Maintenance					
Initial estimate	0.06	0.20	0.22	0.33	0.81
Revised estimate	0.14	0.96	1.21	0.96	3.26
Installation/supplies					
Initial estimate	0.47	-	-	-	0.47
Revised estimate	1.19	0.32	-	-	1.51
Network					
Initial estimate	-	-	-	-	-
Revised estimate	1.52	0.77	0.55	0.39	3.23
IAEA/ICC					
Initial estimate	1.88	0.43	-	-	2.31
Revised estimate	0.99	0.60	0.07	0.09	1.75
Staff					
Initial estimate	-	0.40	1.77	1.80	3.97
Revised estimate	-	0.85	1.65	1.65	4.15
Training					
Initial estimate	-	0.19	0.12	0.09	0.40
Revised estimate	-	0.75	0.56	0.81	2.12
GRAND TOTAL					
Initial estimate	7.60	3.68	9.05	7.52	27.85
Revised estimate	9.71	10.61	13.23	10.81	44.36